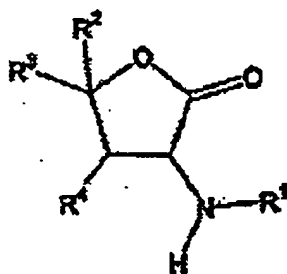


## II. CLAIM AMENDMENTS

1. (Currently Amended) A method for of treating a migraine in a  
subject in need thereof comprising administering Use of to a  
patient a pharmaceutically effective amount of a pharmaceutical  
composition comprising at least one substituted  $\gamma$ -lactone  
compound of the general formula I,



in which

R<sup>1</sup> denotes an optionally at least mono-substituted 2- pyridyl,  
2-pyrimidyl, ~~2-pyrazolyl~~ 3-pyrazolyl, 2-quinolinyl or 2-  
pyrazinyl residue, which may also be fused with a saturated  
or at least partially unsaturated hydrocarbon ring system,

$R^2$  denotes an optionally at least mono-substituted, saturated, branched or unbranched aliphatic  $C_{1-10}$  residue or an optionally at least mono-substituted, at least partially unsaturated, branched or unbranched aliphatic  $C_{2-10}$  residue,

$R^3$  denotes an optionally at least mono-substituted aryl residue,

$R^4$  denotes H,

or

$R^3$  and  $R^4$  together denote an optionally at least mono-substituted, saturated or at least mono-unsaturated aliphatic  $C_{3-7}$  residue, with the proviso that the residue  $R^2$  in this case denotes an optionally at least mono-substituted aryl residue, an optionally at least mono-substituted, saturated, branched or unbranched aliphatic  $C_{1-10}$  residue or an optionally at least mono-substituted, at least partially unsaturated, branched or unbranched aliphatic  $C_{2-10}$  residue,

said compound being in the form of the a racemates, a diastereomers or enantiomers thereof as a free base or of a corresponding physiologically acceptable salt thereof.~~for the production of a pharmaceutical preparation for the treatment of migraine.~~

2. (Currently Amended) The A method Use according to claim 1, characterised in that  $R^1$  denotes an optionally at least mono-substituted 2- pyridyl-residue, which may also be fused with a saturated or at least partially unsaturated hydrocarbon ring

system, preferably denotes a 2- pyridyl residue which is substituted at least in position 4.

3. (Currently Amended) ~~The A method Use~~ according to claim 1, characterised in that R<sup>2</sup> denotes an optionally at least mono-substituted, saturated, branched or unbranched aliphatic C<sub>1-6</sub> residue.

4. (Currently Amended) ~~The A method Use~~ according to claim 1, characterised in that R<sup>3</sup> denotes an optionally at least mono-substituted aryl residue and R<sup>4</sup> denotes H.

5. (Currently Amended) ~~The A method Use~~ according to claim 1, characterised in that the compound ~~used~~ of the general formula I ~~is according to claim 1 comprises at least one compound~~ selected from the group consisting of

5-(2,4-Dimethyl-phenyl)-3-(8-hydroxy-quinolin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(3,4-Dimethyl-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(2,4-Dimethyl-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(4-Cyclohexyl-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(3,5-Dimethyl-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-  
5-methyl-dihydro-furan-2-one,

5-(3,4-Dimethyl-phenyl)-5-methyl-3-(4-methyl-pyridin-2-  
ylamino)-dihydro-furan-2-one,

5-(2,4-Dimethyl-phenyl)-5-methyl-3-(4-methyl-pyridin-2-  
ylamino)-dihydro-furan-2-one,

5-(4-Cyclohexyl-phenyl)-5-methyl-3-(4-methyl-pyridin-2-  
ylamino)-dihydro-furan-2-one,

5-Methyl-3-(quinolin-2-ylamino)-5-m-tolyl-dihydro-furan-2-  
one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-p-tolyl-  
dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-m-tolyl-  
dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(4-ethoxy-phenyl)-5-  
methyl-dihydro-furan-2-one,

4-[4-(3-Bromo-5-methyl-pyridin-2-ylamino)-2-methyl-5-oxo-  
tetrahydro-furan-2-yl]-benzonitrile,

3-(3-Bromo-5-methyl-pyridin-2-ylamino)-5-(4-tert-butyl-  
phenyl)-5-methyl-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-5-methyl-3-(6-propyl-pyridin-2-  
ylamino)-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-5-methyl-3-(4-methyl-3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(5-Bromo-6-methyl-pyridin-2-ylamino)-5-methyl-5-(4-phenoxy-phenyl)-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-5-methyl-3-(3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(3-Benzyloxy-pyridin-2-ylamino)-5-methyl-5-(4-phenoxy-phenyl)-dihydro-furan-2-one,

3-(3-Benzyloxy-pyridin-2-ylamino)-5-(4-tert-butyl-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-(4-phenoxy-phenyl)-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydrofuran-2-one,

5-Methyl-3-(4-methyl-pyridin-2-ylamino)-5-(4-phenoxy-phenyl)-dihydro-furan-2-one,

5-(4-tert-Butyl-phenyl)-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

4-[4-(5-Bromo-3-nitro-pyridin-2-ylamino)-2-methyl-5-oxo-tetrahydro-furan-2-yl]-benzonitrile,

4-[4-(5-Bromo-pyrimidin-2-ylamino)-2-methyl-5-oxo-tetrahydro-furan-2-yl]-benzonitrile,

5-Benzo[b]thiophen-2-yl-5-methyl-3-(6-propyl-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(4-isopropyl-phenyl)-5-methyl-dihydro-furan-2-one,

5-Benzofuran-2-yl-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-Benzo[b]thiophen-2-yl-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-Benzofuran-2-yl-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(5-Benzo[1,3]dioxol-5-yl-5-methyl-2-oxo-tetrahydro-furan-3-ylamino)-1H-pyrazole-4-carbonitrile,

3-(5-Benzo[1,3]dioxol-5-yl-5-methyl-2-oxo-tetrahydro-furan-3-ylamino)-1H-pyrazole-4-carboxylic acid ethyl ester,

5-Benzo[1,3]dioxol-5-yl-5-methyl-3-(3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-(5,6,7,8-tetrahydro-naphthalen-2-yl)-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-methyl-5-naphthalen-2-yl-dihydro-furan-2-one,

5-Benzo[1,3]dioxol-5-yl-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-Methyl-3-(4-methyl-pyridin-2-ylamino)-5-(5,6,7,8-tetrahydro-naphthalen-2-yl)-dihydro-furan-2-one,

5-Benzo[1,3]dioxol-5-yl-5-methyl-3-(5-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-Benzo[1,3]dioxol-5-yl-5-methyl-3-(6-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(5-Bromo-3-nitro-pyridin-2-ylamino)-5-methyl-5-(5,6,7,8-tetrahydro-naphthalen-2-yl)-dihydro-furan-2-one,

3-(5-Bromo-3-nitro-pyridin-2-ylamino)-5-isopropyl-5-phenyl-dihydro-furan-2-one,

5-Isopropyl-3-(5-nitro-pyridin-2-ylamino)-5-phenyl-dihydro-furan-2-one,

5-Methyl-5-naphthalen-2-yl-3-(5-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

5-Isopropyl-5-phenyl-3-(pyrimidin-2-ylamino)-dihydrofuran-2-one,

3-[5-(4-Iodo-phenyl)-5-methyl-2-oxo-tetrahydro-furan-3-ylamino]-1H-pyrazole-4-carboxylic acid ethyl ester,

5-(4-Bromo-phenyl)-3-(5-bromo-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

3-(3-Bromo-5-methyl-pyridin-2-ylamino)-5-methyl-5-naphthalen-1-yl-dihydro-furan-2-one,

5-Methyl-5-naphthalen-1-yl-3-(6-propyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(3-Chloro-phenyl)-5-methyl-3-(6-propyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(3-Chloro-phenyl)-5-methyl-3-(4-methyl-3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(4-Bromo-phenyl)-5-methyl-3-(4-methyl-3-nitro-pyridin-2-ylamino)-dihydro-furan-2-one,

3-(5-Bromo-6-methyl-pyridin-2-ylamino)-5-methyl-5-naphthalen-1-yl-dihydro-furan-2-one,

3-(5-Bromo-6-methyl-pyridin-2-ylamino)-5-(4-iodo-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3-Benzyloxy-pyridin-2-ylamino)-5-(4-iodo-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3-Benzyloxy-pyridin-2-ylamino)-5-(4-bromo-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(4-iodo-phenyl)-5-methyl-dihydro-furan-2-one,



5-(3-Chloro-phenyl)-3-(4, 6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(4-Bromo-phenyl)-5-methyl-3-(3-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(4-Bromo-phenyl)-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

2-[5-(3,5-Dimethoxy-phenyl)-5-methyl-2-oxo-tetrahydro-furan-3-ylamino]-4-propyl-pyrimidine-5-carboxylic acid ethyl ester,

3-(4-Bromo-1H-pyrazol-3-ylamino)-5-(3,5-dimethoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4-Bromo-1H-pyrazol-3-ylamino)-5-(2-methoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-[5-(2,5-Dimethoxy-phenyl)-5-methyl-2-oxo-tetrahydro-furan-3-ylamino]-1H-pyrazole-4-carbonitrile,

3-[5-(2,5-Dimethoxy-phenyl)-5-methyl-2-oxo-tetrahydro-furan-3-ylamino]-5-methylsulfanyl-1H-pyrazole-4-carbonitrile,

5-(2,5-Dimethoxy-phenyl)-5-methyl-3-(pyridin-2-ylamino)-dihydro-furan-2-one,

5-(2-Methoxy-phenyl)-5-methyl-3-(pyridin-2-ylamino)-dihydro-furan-2-one,

3-(3-Chloro-5-trifluoromethyl-pyridin-2-ylamino)-5-(3,5-dimethoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3-Chloro-5-trifluoromethyl-pyridin-2-ylamino)-5-(2,5-dimethoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3,5-Dichloro-pyridin-2-ylamino)-5-(2-methoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(3-Chloro-5-trifluoromethyl-pyridin-2-ylamino)-5-(2,4-dimethoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(3-methoxy-phenyl)-5-methyl-dihydro-furan-2-one,

3-(4,6-Dimethyl-pyridin-2-ylamino)-5-(4-methoxy-phenyl)-5-methyl-dihydro-furan-2-one,

5-(3,4-Dimethoxy-phenyl)-3-(4,6-dimethyl-pyridin-2-ylamino)-5-methyl-dihydro-furan-2-one,

5-(4-Methoxy-phenyl)-5-methyl-3-(4-methyl-pyridin-2-ylamino)-dihydro-furan-2-one,

5-(2,5-Dimethoxy-phenyl)-5-methyl-3-(pyrazin-2-ylamino)-dihydro-furan-2-one and

5-Methylsulfanyl-3-(2-oxo-5-phenyl-5-propyl-tetrahydro-furan-3-ylamino)-1H-pyrazole-4-carbonitrile

and the corresponding physiologically acceptable salts thereof, preferably the hydrochlorides thereof.

6. (Currently Amended) ~~The A method according to claim 1 Use of using of treating septic shock comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1 according to claim 1. for the production of a pharmaceutical preparation for the treatment of septic shock.~~

7. (Currently Amended) ~~The A method according to claim 1 Use of using of treating a neurodegenerative disease comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1. according to claim 1 for the production of a pharmaceutical preparation for the treatment of neurodegenerative diseases.~~

8. (Currently Amended) ~~The A method Use according to claim 7, wherein the neurodegenerative disease is multiple sclerosis. for the production of a pharmaceutical preparation for the treatment of multiple sclerosis.~~

9. (Currently Amended) ~~The A method Use according to claim 7, wherein the neurodegenerative disease is Parkinson's disease. for the production of a pharmaceutical preparation for the treatment of Parkinson's disease.~~

10. (Currently Amended) ~~The A method Use according to claim 7, for the production of a pharmaceutical preparation for the~~

~~treatment of~~ wherein the neurodegenerative disease is Alzheimer's disease.

11. (Currently Amended) ~~The A method Use according to claim 7, for the production of a pharmaceutical preparation for the treatment of~~ wherein the neurodegenerative disease is Huntington's chorea.

12. (Currently Amended) ~~The A method according to claim 1 Use of using of treating inflammation comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1, according to claim 1 for the production of a pharmaceutical preparation for the treatment of inflammation.~~

13. (Currently Amended) ~~The A method according to claim 1 Use of using of treating inflammatory pain comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1, according to claim 1 for the production of a pharmaceutical preparation for the treatment of inflammatory pain.~~

14. (Currently Amended) ~~The A method according to claim 1 Use of using of treating cerebral ischaemia comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone~~

compound of the general formula I according to claim 1.~~according to claim 1 for the production of a pharmaceutical preparation for the treatment of cerebral ischaemia.~~

15. (Currently Amended) ~~The A method according to claim 1~~ Use of using of treating diabetes comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1.~~according to claim 1 for the production of a pharmaceutical preparation for the treatment of diabetes.~~

16. (Currently Amended) ~~The A method according to claim 1~~ Use of using of treating meningitis comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1.~~according to claim 1 for the production of a pharmaceutical preparation for the treatment of meningitis.~~

17. (Currently Amended) ~~The A method according to claim 1~~ Use of using of treating arteriosclerosis comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1.~~according to claim 1 for the production of a pharmaceutical preparation for the treatment of arteriosclerosis.~~

18. (Currently Amended) ~~The A method according to claim 1 Use of using of wound healing comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1. according to claim 1 for the production of a pharmaceutical preparation for wound healing.~~

19. (Currently Amended) ~~The A method according to claim 1 Use of using of treating a neoplastic disease comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1. according to claim 1 for the production of a pharmaceutical preparation for the treatment of neoplastic diseases.~~

20. (Currently Amended) ~~The A method according to claim 1 Use of using of treating a fungal disease comprising administering to a patient a pharmaceutically effective amount of a pharmaceutical composition comprising at least one substituted  $\gamma$ -lactone compound of the general formula I according to claim 1. according to claim 1 for the production of a pharmaceutical preparation for the treatment of fungal diseases.~~